

## STRUCTURE SEARCH

=&gt; d his l39

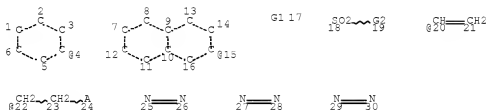
(FILE 'HCAPLUS' ENTERED AT 13:41:27 ON 20 JUL 2010)

L39 14 S L35 AND (L37 OR L38)

=&gt; d que l39

L19

STR



VAR G1=4/15

VAR G2=20/22

NODE ATTRIBUTES:

NSPEC IS RC AT 24

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L24 1680 SEA FILE=REGISTRY SSS FUL L19

L27 216 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L24

L32 QUE SPE=ON ABB=ON PLU=ON (LEATHER? OR COWHIDE OR CO  
W(A)HIDE)

L35 14 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L27 AND L32

L37 QUE SPE=ON ABB=ON PLU=ON PY=&lt;2004 NOT P/DT

L38 QUE SPE=ON ABB=ON PLU=ON (PY=<2004 OR PRY=<2004 OR  
AY=<2004 OR MY=<2004 OR REVIEW/DT) AND P/DTL39 14 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L35 AND (L37  
OR L38)

STRUCTURE SEARCH RESULTS

=&gt; d 139 1-14 ibib ed abs hitstr hitind

L39 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:1450040 HCAPLUS Full-text

DOCUMENT NUMBER: 148:56589

TITLE: Compositions containing anionic coloring agents for dyeing leather, paper, cardboard and textile substrates

INVENTOR(S): Mazza, Jorge

PATENT ASSIGNEE(S): Vilmax S.A.C.I.F.I.A., Argent.

SOURCE: U.S. Pat. Appl. Publ., 10pp., Cont.-in-part of U.S. Ser. No. 881,342, abandoned.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20070289072	A1	20071220	US 2007-748371	2007 0514
US 20020083532	A1	20020704	US 2001-23962	2001 1218
US 20060150345	A1	20060713	US 2004-881342	2004 0630
PRIORITY APPLN. INFO.:			AR 2000-106734	A 2000 1218
			US 2001-23962	B2 2001 1218
			US 2004-881342	B2 2004 0630

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): CASREACT 148:56589; MARPAT 148:56589

ED Entered STN: 21 Dec 2007

AB The anionic coloring agents have formula: CA-RSA (CA = chromophore groups; RSA = spacer-arm with the chemical structure -X-2-R where X = direct bond; -S(O)<sub>n</sub>, -NR<sub>1</sub>, wherein R<sub>1</sub> = H, Cl-10 alkyl group; Z = Cl-10 alkylene group; R = amino group, alternatively, R = -NR<sub>4</sub>-(CH<sub>2</sub>)<sub>m</sub>-W, wherein R<sub>4</sub> = H, hydroxy Cl-Cl<sub>10</sub> alkyl group, Cl-10 alkyl group; m = 1-10; W = carboxy or it ester and amide group, -CN, sulfonic group or its derivative groups; provided that when X = NR<sub>1</sub> and R = amino group of NR<sub>2</sub>R<sub>3</sub> then R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> can not be simultaneously a H atom). The inclusion of spacer-arms in anionic coloring agents improves dye properties such as strength, tone and affinity. Thus, coupling of diazotized 2-naphthylamino-3,6,8-trisulfonic acid with 3-ureidoaniline, reacting the resulting coupling product with cyanuric chloride and coupling again with m-phenylenediamine-4-sulfonic acid at controlled conditions gave a monochlorotriazine dye precursor which was mixed with 4-aminophenyl-β-hydroxyethylsulfone sulfate ester, and ε-aminocaproic acid, diazotized and coupled to give a coloring agent.

IT 440103-79-7P

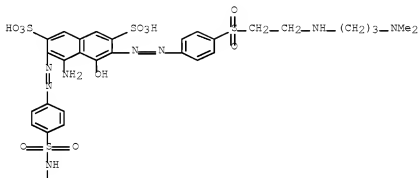
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

# 10/577,776-337287-EIC SEARCH

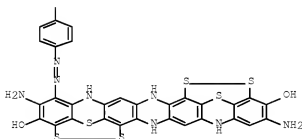
(anionic dye; manufacture of compns. containing anionic coloring agents for dyeing leather, paper, cardboard and textile substrates)

RN 440103-79-7 HCAPLUS  
CN 2,7-Naphthalenedisulfonic acid, 4-amino-3-[2-[4-[[[4-[(2,11-diamino-7,9,16,18-tetrahydro-3,12-dihydroxy-4,6:13,15-diepidithiopyrazino[2,3-b:5,6-b']diphenothiazin-1-yl)azo]phenyl]amino]sulfonyl]phenyl]diazenyl]-6-[2-[4-[[[2-[[3-(dimethylamino)propyl]amino]ethyl]sulfonyl]phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

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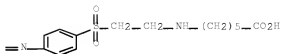
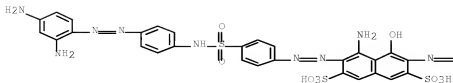


PAGE 2-A



IT 960071-41-4  
RL: PRP (Properties); TEM (Technical or engineered material use);  
USES (Uses)  
(anionic dye; manufacture of compns. containing anionic coloring agents for dyeing leather, paper, cardboard and textile substrates)

RN 960071-41-4 HCAPLUS  
CN Hexanoic acid, 6-[[[2-[[[4-[[2-[8-amino-7-[2-[4-[[[4-[[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-1-hydroxy-3,6-disulfo-2-naphthalenyl]diazenyl]phenyl]sulfonyl]ethyl]amino]- (CA INDEX NAME)



INCL 008652000; 008675000; 008696000  
 IPCI C09B0049-00 [I,A]; C09B0056-00 [I,A]; C09B0056-10 [I,A];  
 C09B0056-12 [I,A]; C09B0056-14 [I,A]  
 NCL 008/652.000; 008/675.000; 008/696.000  
 CC 41-8 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
 Photographic Sensitizers)  
 Section cross-reference(s): 40, 43, 45  
 ST textile paper leather dye coloring agent  
 IT Azo dyes  
 Dyeing  
 Leather  
 Paper  
 Paperboard  
 Textiles  
 (manufacture of compns. containing anionic coloring agents for dyeing  
 leather, paper, cardboard and textile substrates)  
 IT 440103-79-7P 960071-43-6P 960071-44-7P  
 960071-45-8P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical  
 or engineered material use); PREP (Preparation); USES (Uses)  
 (anionic dye; manufacture of compns. containing anionic coloring agents  
 for dyeing leather, paper, cardboard and textile  
 substrates)  
 IT 960071-40-3 960071-41-4  
 RL: PRP (Properties); TEM (Technical or engineered material use);  
 USES (Uses)  
 (anionic dye; manufacture of compns. containing anionic coloring agents  
 for dyeing leather, paper, cardboard and textile  
 substrates)  
 IT 88-63-1, m-Phenylenediamine-4-sulfonic acid 90-20-0,  
 4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid 90-51-7,  
 6-Amino-4-hydroxy-2-naphthalenesulfonic acid 102-01-2,  
 Acetoacetanilide 106-50-3, p-Phenylenediamine, reactions  
 591-27-5, m-Aminophenol 25711-72-2, 3-Ureidoaniline  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling component; manufacture of compns. containing anionic coloring  
 agents for dyeing leather, paper, cardboard and  
 textile substrates)  
 IT 118-03-6, 2-Amino-3,6,8-naphthalenetrisulfonic acid 2494-89-5,  
 4-Aminophenyl β-hydroxyethyl sulfone sulfate ester  
 16803-97-7, 4,4'-Diaminosulfanilide 78696-32-9 440103-81-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (diazotized component; manufacture of compns. containing anionic  
 coloring agents for dyeing leather, paper, cardboard

# 10/577,776-337287-EIC SEARCH

and textile substrates)

IT 60-32-2, 6-Aminocaproic acid 108-77-0, Cyanuric chloride  
 1326-82-5, Sulfur Black 1 2937-53-3, 2-Aminoethanethiosulfonic  
 acid 22584-31-2, 3-[(2-Aminoethyl)amino]propionitrile  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacture of compns. containing anionic coloring agents for dyeing  
 leather, paper, cardboard and textile substrates)

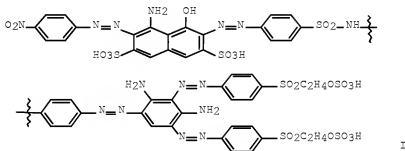
L39 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2006:342381 HCAPLUS Full-text  
 DOCUMENT NUMBER: 144:371568  
 TITLE: Reactive polyazo dyes for coloring textiles.  
 INVENTOR(S): Lamm, Gunther; Goerlitz, Gunter; Klingenmeier,  
 Horst  
 PATENT ASSIGNEE(S): Dystar Textilfarben GmbH & Co. Deutschland KG,  
 Germany  
 SOURCE: Ger. Offen., 31 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102004049092	A1	20060413	DE 2004-102004049092	2004 1008
AU 2005293613	A1	20060420	AU 2005-293613	2005 1005
WO 2006040285	A1	20060420	WO 2005-EP55027	2005 1005
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AH, AZ, BY, KG, KZ, MD, RU, TJ, TM EP 1799772 A1 20070627 EP 2005-791995 2005 1005 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR CN 101040011 A 20070919 CN 2005-80034488 2005 1005 JP 2008516032 T 20080515 JP 2007-535169 2005 1005				

## 10/577,776-337287-EIC SEARCH

BR 2005016480	A	20080902	BR 2005-16480	2005 1005
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US 20080047079	A1	20080228	US 2007-576721	2007 0626
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PRIORITY APPLN. INFO.:			DE 2004-102004049092A	2004 1008
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			WO 2005-EP55027	W 2005 1005

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): CASREACT 144:371568; MARPAT 144:371568  
 ED Entered STN: 14 Apr 2006  
 GI



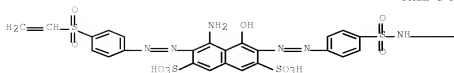
AB Reactive polyazo dyes such as I are used for dyeing OH- and amino-group-containing fabrics and leather.

IT 882066-87-7P 882066-88-8P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (gray dye; reactive polyazo dyes used for dyeing OH- and amino-group-containing fabrics and leather)

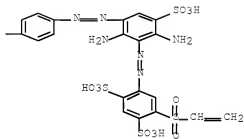
RN 882066-87-7 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-[2,4-diamino-3-[2-[5-(ethenylsulfonyl)-2,4-disulphophenyl]diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-3-[2-[4-(ethenylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A



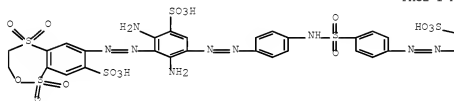
PAGE 1-B



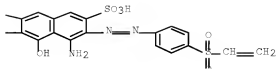
RN 882066-88-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-6-[2-[4-[[[4-[2-[2,4-diamino-3-[2-(3,4-dihydro-1,1,5,5-tetraoxido-8-sulfo-2,1,5-benzoxadithiepin-7-yl)diazenyl]-5-sulphophenyl]diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-3-[2-[4-(ethenylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IT 882066-85-5P 882066-86-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

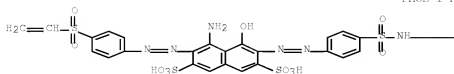
# 10/577,776-337287-EIC SEARCH

(green dye; reactive polyazo dyes used for dyeing OH- and amino-group-containing fabrics and leather)

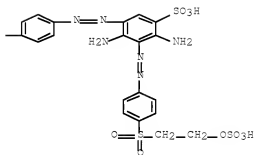
RN 882066-85-5 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-6-[2-[4-[[[4-[2-[2,4-diamino-5-sulfo-3-[2-[4-[[2-(sulfooxy)ethyl)sulfonyl]phenyl]diazenyl]phenyl]diazenyl]phenyl]amino)sulfonyl]phenyl]diazenyl]-3-[2-[4-(ethenylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A



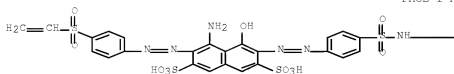
PAGE 1-B



RN 882066-86-6 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-6-[2-[4-[[[4-[2-[2,4-diamino-3-[2-[4-(ethenylsulfonyl)phenyl]diazenyl]-5-sulfo-phenyl]diazenyl]phenyl]amino)sulfonyl]phenyl]diazenyl]-3-[2-[4-(ethenylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A





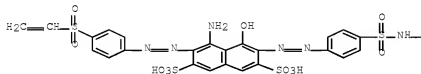


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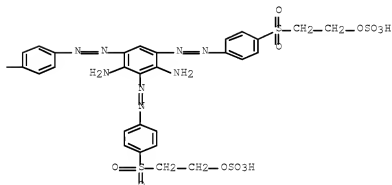
material use); PREP (Preparation); USES (Uses)  
 (reactive polyazo dyes used for dyeing OH- and  
 amino-group-containing fabrics and leather)

RN 882066-80-0 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-[2,4-diamino-3,5-bis[2-[4-[[2-(  
 (sulfoxy)ethyl)sulfonyl]phenyl]diazenyl]phenyl]diazenyl]phenyl]am  
 ino[sulfonyl]phenyl]diazenyl]-3-[2-[4-(  
 (ethenylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A

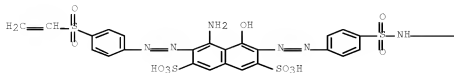


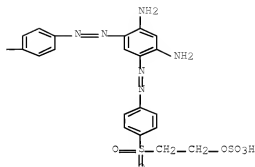
PAGE 1-B



RN 882066-81-1 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-[2,4-diamino-5-[2-[4-[[2-(  
 (sulfoxy)ethyl)sulfonyl]phenyl]diazenyl]phenyl]diazenyl]phenyl]am  
 ino[sulfonyl]phenyl]diazenyl]-3-[2-[4-(  
 (ethenylsulfonyl)phenyl]diazenyl)-5-hydroxy- (CA INDEX NAME)

PAGE 1-A





- IPCI C09B0062-533 [I,A]; C09B0062-44 [I,C\*]; D06P0001-38 [I,A];  
C09B0067-36 [I,A]; C09B0067-00 [I,C\*]
- IPCR C09B0062-44 [I,C]; C09B0062-533 [I,A]; C09B0067-00 [I,C];  
C09B0067-36 [I,A]; D06P0001-38 [I,C]; D06P0001-38 [I,A]
- CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
Photographic Sensitizers)  
Section cross-reference(s): 40  
ST reactive azo dye cotton wool leather dyeing  
IT Leather  
(dyeing; reactive polyazo dyes used for dyeing OH- and  
amino-group-containing fabrics and leather)
- IT Polyamide fibers, miscellaneous  
RL: MSC (Miscellaneous)  
(dyeing; reactive polyazo dyes used for dyeing OH- and  
amino-group-containing fabrics and leather)
- IT Reactive dyeing  
(of fibers and leather; reactive polyazo dyes used  
for dyeing OH- and amino-group-containing fabrics and  
leather)
- IT Cotton fibers  
Reactive azo dyes  
Reactive dyes  
Wool  
(reactive polyazo dyes used for dyeing OH- and  
amino-group-containing fabrics and leather)
- IT 882066-84-4P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(black dye; reactive polyazo dyes used for dyeing OH- and  
amino-group-containing fabrics and leather)
- IT 5329-14-6, Amidosulfonic acid 42986-22-1 56125-05-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; reactive polyazo dyes used for dyeing OH-  
and amino-group-containing fabrics and leather)
- IT 90-20-0, 1-Amino-8-hydroxy-3,6-naphthalenedisulfonic acid  
108-45-2, m-Phenylenediamine, reactions 16803-97-7,  
4-Amino-N-(4-aminophenyl)benzenesulfonamide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(diazo component; reactive polyazo dyes used for dyeing OH- and  
amino-group-containing fabrics and leather)
- IT 882066-87-7P 882066-88-8P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(gray dye; reactive polyazo dyes used for dyeing OH- and  
amino-group-containing fabrics and leather)

## 10/577,776-337287-EIC SEARCH

IT 882066-85-5P 882066-86-6P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (green dye; reactive polyazo dyes used for dyeing OH- and amino-group-containing fabrics and leather)

IT 882066-79-7P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (reactive polyazo dyes used for dyeing OH- and amino-group-containing fabrics and leather)

IT 72089-20-4P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (reactive polyazo dyes used for dyeing OH- and amino-group-containing fabrics and leather)

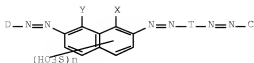
IT 882066-80-6P 882066-81-1P 882066-82-2P  
 882066-83-3P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (reactive polyazo dyes used for dyeing OH- and amino-group-containing fabrics and leather)

IT 88-63-1 100-01-6, 4-Nitroaniline, reactions 2494-88-4  
 2494-89-5 214897-29-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactive polyazo dyes used for dyeing OH- and amino-group-containing fabrics and leather)

L39 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2003:297799 HCAPLUS Full-text  
 DOCUMENT NUMBER: 138:273003  
 TITLE: Aromatic diformamide of N,N'-disubstituted aniline in the synthesis of azo dyes  
 INVENTOR(S): Lin, Haixia; Wang, Limin; Xiong, Jing; Zhang, Jing; Wang, Lijun  
 PATENT ASSIGNEE(S): Wenzhou Normal College, Peop. Rep. China;  
 Huadong University of Technology  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 23 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1339541	A	20020313	CN 2001-126872	2001 0926
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CN 1131283	C	20031217		
PRIORITY APPLN. INFO.:			CN 2001-126872	2001 0926
			<--	

OTHER SOURCE(S): MARPAT 138:273003  
 ED Entered STN: 18 Apr 2003  
 GI



I

AB An aromatic diformamide of N,N'-disubstituted aniline having the general formula I (X = Ph, naphthyl, pyridinyl, pyrrolidinyl, furfuryl; n = 0 or 1) has been used as an alternative intermediate to the benzidine group in the synthesis of azo dyes. A series of azo dyes were synthesized using these intermediates to eliminate the use of toxic, carcinogenic benzidine derivs. The N,N'-di-substituted anilino aromatic dimethylamide azo dyes can be used in dyeing of leather, wool, silk, etc.

IT 503448-01-9P 503448-02-0P

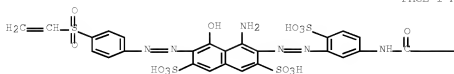
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(production of azo dyes with aromatic diformamide of N,N'-disubstituted aniline intermediates)

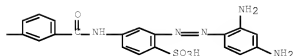
RN 503448-01-9 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[2-[5-[[3-[[3-[2-(2,4-diaminophenyl)diazenyl]-4-sulfophenyl]amino]carbonyl]benzoyl]amino]-2-sulfophenyl]diazenyl]-6-[2-[4-(ethylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A



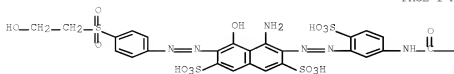
PAGE 1-B

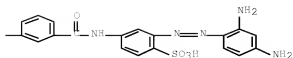


RN 503448-02-0 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[2-[5-[[3-[[3-[2-(2,4-diaminophenyl)diazenyl]-4-sulfophenyl]amino]carbonyl]benzoyl]amino]-2-sulfophenyl]diazenyl]-5-hydroxy-6-[2-[4-(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A





IPCI C09B0033-147 [ICM,7]; C09B0033-00 [ICM,7,C\*]  
 IPCR C09B0033-00 [I,C\*]; C09B0033-147 [I,A]  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
 Photographic Sensitizers)

Section cross-reference(s): 23

IT Azo dyes

Leather

Silk

Wool

(production of azo dyes with aromatic diformamide of  
 N,N'-disubstituted aniline intermediates)

IT	495402-24-9P	503447-75-4P	503447-76-5P	503447-77-6P
	503447-78-7P	503447-79-8P	503447-80-1P	503447-81-2P
	503447-82-3P	503447-83-4P	503447-84-5P	503447-85-6P
	503447-86-7P	503447-87-8P	503447-88-9P	503447-89-0P
	503447-90-3P	503447-91-4P	503447-92-5P	503447-93-6P
	503447-94-7P	503447-95-8P	503447-96-9P	503447-97-0P
	503447-98-1P	503447-99-2P	503448-00-8P	503448-01-9P
	503448-02-0P	503448-03-1P	503448-04-2P	503448-05-3P
	503448-06-4P	503448-08-6P	503448-09-7P	503448-10-0P
	503448-11-1P	503448-12-2P	503448-13-3P	503448-14-4P
	503448-15-5P	503448-16-6P	503448-17-7P	503448-18-8P

RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)

(production of azo dyes with aromatic diformamide of  
 N,N'-disubstituted aniline intermediates)

L39 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2002:505067 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:80276  
 TITLE: Anionic azo dyes and their use on cotton and  
 leather  
 INVENTOR(S): Mazza, Jorge  
 PATENT ASSIGNEE(S): Argent.  
 SOURCE: U.S. Pat. Appl. Publ., 9 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20020083532	A1	20020704	US 2001-23962	2001 1218
			<--	
US 20060150345	A1	20060713	US 2004-881342	2004 0630
			<--	
US 20070289072	A1	20071220	US 2007-748371	2007 0514
			<--	

## 10/577,776-337287-EIC SEARCH

PRIORITY APPLN. INFO.:

AR 2000-106734

A

2000  
1218

&lt;---

US 2001-23962

A2

2001  
1218

&lt;---

US 2004-881342

B2

2004  
0630

&lt;---

OTHER SOURCE(S): MARPAT 137:80276

ED Entered STN: 05 Jul 2002

AB Anionic azo dyes are obtained which comprise at least one spacer arm bounded to their chemical structure. These anionic coloring agents may be depicted by CA-BE, wherein CA is an anionic coloring agent comprising at least 1 chromophore group and BE is the spacer arm, which has the chemical structure:  $-(X-R-Z)r$ , wherein X is a direct link or a group having the formula  $-S(O)s$ , wherein s is 0-2; or  $-NR1-$ , wherein R1 is H or a C1-10-alkyl group; R is a C1-10 straight or branched alkylene group; Z is a polar group; and r is  $\geq 1$ . The invention also refers to coloring compns., which comprise at least one anionic coloring agent CA-BE in admixt. with anionic coloring agents which do not have spacer arms. The anionic coloring agents and the coloring compns. containing them may be used to dye cotton and wool substrates, regenerated cellulose, leather, cardboard, and paper. The introduction of spacer arms in the structure of the anionic coloring agents leads to modified anionic coloring agents, which differ from the known coloring agents in their dyeing properties such as strength, tone, and affinity, due to fixation modifications onto the substrate to be dyed. Examples were given for the preparation of acid, reactive, sulfur, and metalized dyes.

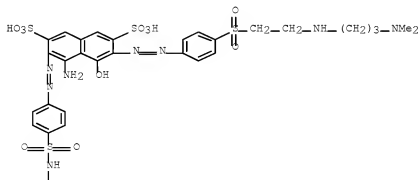
IT 440103-79-7P

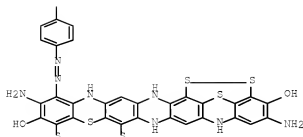
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(sulfur dye for leather; production of anionic azo dyes with spacer arms)

RN 440103-79-7 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[2-[4-[[[4-[(2,11-diamino-7,9,16,18-tetrahydro-3,12-dihydroxy-4,6:13,15-diepidithiopyrazino[2,3-b:5,6-b']diphenothiazin-1-yl)azo]phenyl]amino]sulfonyl]phenyl]diazonyl]-6-[2-[4-[[[2-[[[3-(dimethylamino)propyl]amino]ethyl]sulfonyl]phenyl]diazonyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A





INCL 008436000

IPCI D06P0003-32 [ICM]; D06P0003-04 [ICM,C\*]; C09B0001-00 [ICS];  
 D06P0001-00 [ICS]; C09B0047-04 [ICS]; C09B0003-00 [ICS];  
 C09B0005-00 [ICS]; C09B0006-00 [ICS]

IPCR C07D0251-00 [I,C\*]; C07D0251-54 [I,A]; C07D0251-68 [I,A];  
 C09B0035-00 [I,C\*]; C09B0035-36 [I,A]; C09B0043-00 [I,C\*];  
 C09B0043-16 [I,A]; C09B0045-00 [I,C\*]; C09B0045-26 [I,A];  
 C09B0056-00 [I,C\*]; C09B0056-00 [I,A]; C09B0062-02 [I,C\*];  
 C09B0062-09 [I,A]; C09B0062-44 [I,C\*]; C09B0062-513 [I,A];  
 C09B0067-00 [I,C\*]; C09B0067-22 [I,A]; C09B0069-00 [I,C\*];  
 C09B0069-00 [I,A]; C09B0069-04 [I,A]; D06P0001-64 [I,C\*];  
 D06P0001-642 [I,A]

NCL 008/436.000; 008/437.000; 008/636.000; 008/657.000; 008/661.000;  
 008/662.000; 008/675.000; 008/917.000; 008/918.000; 008/919.000

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
 Photographic Sensitizers)

Section cross-reference(s): 28, 40, 45

IT Azo dyes

(acid; production of anionic azo dyes with spacer arms for  
 leather and cotton)

IT Textiles

(cotton; production of anionic azo dyes with spacer arms for  
 leather and cotton)

IT Leather

(production of anionic azo dyes with spacer arms for  
 leather and cotton)

IT 1102416-75-0 1102416-76-1 1102416-77-2 1102416-78-3

RL: PRPH (Prophetic)

(Anionic azo dyes and their use on cotton and leather  
 )

IT 440103-78-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)

(acid dye for leather; production of anionic azo dyes  
 with spacer arms)

IT 440103-80-0P

RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)

(metalized dye for leather; production of anionic azo  
 dyes with spacer arms)

IT 440103-79-7P

RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)

(sulfur dye for leather; production of anionic azo dyes  
 with spacer arms)

L39 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:791820 HCAPLUS Full-text

DOCUMENT NUMBER: 132:23858



## 10/577,776-337287-EIC SEARCH

TITLE: Tris- and polyazo reactive dyes, their mixtures, their production and uses  
 INVENTOR(S): Patsch, Manfred; Scholz, Gerhard  
 PATENT ASSIGNEE(S): BASF A.-G., Germany  
 SOURCE: Ger. Offen., 18 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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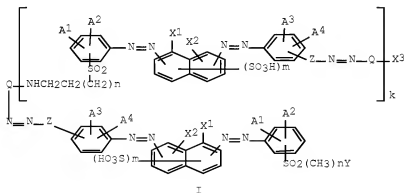
DE 19825202	A1	19991209	DE 1998-19825202	1998 0605
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WO 9964520	A1	19991216	WO 1999-EP3535	1999 0522
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W: BR, IN, KR, MX, TR, US  
 RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,  
 MC, NL, PT, SE  
 EP 1086180 A1 20010328 EP 1999-955488  
 1999  
0522

R: DE, ES, GB, IT  
 PRIORITY APPLN. INFO.: DE 1998-19825202 A 1998  
 0605  
 WO 1999-EP3535 W 1999  
 0522

OTHER SOURCE(S): MARPAT 132:23858  
 ED Entered STN: 16 Dec 1999  
 GI



## 10/577,776-337287-EIC SEARCH

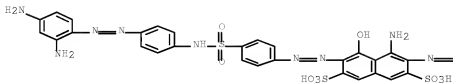
AB Vinyl sulfone reactive azo dyes [I; A1, A2, A3, A4 = H, sulfo; Q = aromatic or heterocyclic connecting group; X1, X2 = 1 each of hydroxy or amino/substituted amino; X3 = H, amino; Y = vinyl or group convertible thereto; Z = direct bond or organic connecting group; k = 0 or (when X3 = amino) 1-4; m = 1, 2; n = 0, 1] are obtained which have good substantivity, especially on leather. In an example, p-(2-hydroxyethylsulfonyl)aniline-1-hydroxy-8-amino-3,6-naphthalenedisulfonic acid was prepared and coupled with tetrazotized 4,4'-diaminodiphenylsulfamide; coupling of the product with m-phenylenediamine gave a black dye ( $\lambda_{\max}$  399, 472, 608 nm).

IT 252011-02-2P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (black dye; production of polyazo reactive dyes)

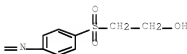
RN 252011-02-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

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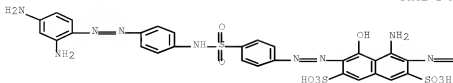


IT 252011-06-6P 252011-07-7P  
 252011-08-8P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (black dye; production of polyazo reactive dyes for leather)

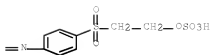
RN 252011-06-6 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[(2-sulfoxyethyl)sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A

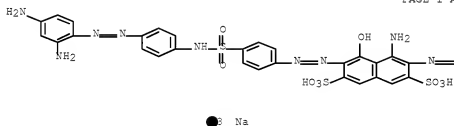


PAGE 1-B

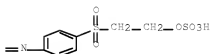


RN 252011-07-7 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-(2,4-  
 diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-  
 hydroxy-3-[2-[4-[[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-,  
 sodium salt (1:3) (CA INDEX NAME)

PAGE 1-A

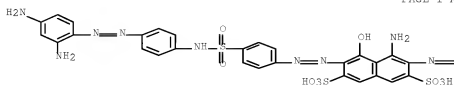


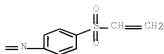
PAGE 1-B



RN 252011-08-8 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-(2,4-  
 diaminophenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-3-[2-  
 [(ethenylsulfonyl)phenyl]diazenyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A



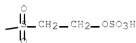
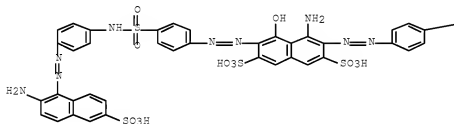


IT 252011-13-5P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(blue dye; production of polyazo reactive dyes for leather)

RN 252011-13-5 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-6-[2-[4-[[[4-[2-(2-amino-6-sulfo-1-naphthalenyl)diazenyl]phenyl]amino]sulfonyl]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



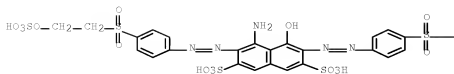
IT 252011-09-9P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dark green dye; production of polyazo reactive dyes for leather)

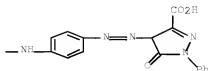
RN 252011-09-9 HCAPLUS

CN 1H-Pyrazole-3-carboxylic acid,  
4-[2-[4-[[[4-[2-[8-amino-1-hydroxy-3,6-disulfo-7-[2-[4-[[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-2-naphthalenyl]diazenyl]phenyl]sulfonyl]amino]phenyl]diazenyl]-4,5-dihydro-5-oxo-1-phenyl]- (CA INDEX NAME)

PAGE 1-A

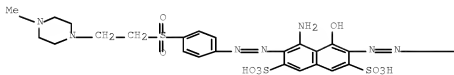


PAGE 1-B

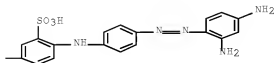


IT 252011-03-3P 252011-04-4P  
 252011-05-5P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dye; production of polyazo reactive dyes)  
 RN 252011-03-3 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[4-(2-(2,4-diaminophenyl)diazenyl]phenyl)amino]-3-sulfophenyl]diazenyl]-5-hydroxy-3-[2-[4-[[2-(4-methyl-1-piperazinyl)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A

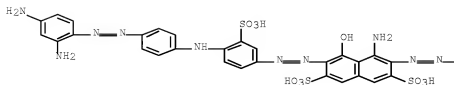


PAGE 1-B

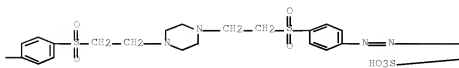


RN 252011-04-4 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 3,3'-[1,4-piperazinediyl]bis(2,1-ethanediylsulfonyl-4,1-phenyleneazo)bis[4-amino-6-[[4-[[4-(2,4-diaminophenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-(9CI) (CA INDEX NAME)

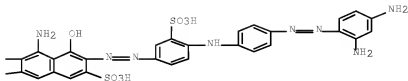
PAGE 1-A



PAGE 1-B

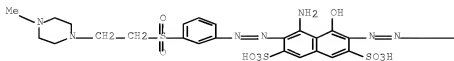


PAGE 1-C

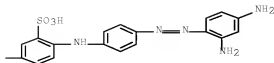


RN 252011-05-5 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[4-[2-(2,4-diaminophenyl)diazenyl]phenyl]amino]-3-  
 sulfophenyl]diazenyl]-5-hydroxy-3-[2-[3-[[2-(4-methyl-1-  
 piperazinyl)ethyl]sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

PAGE 1-A

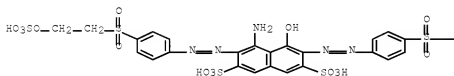


PAGE 1-B

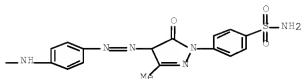


IT 252011-10-2P 252011-11-3P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (green dye; production of polyazo reactive dyes for leather)  
 )  
 RN 252011-10-2 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-[1-[4-(aminosulfonyl)phenyl]-4,5-dihydro-3-methyl-5-oxo-1H-pyrazol-4-yl]diazanyl]phenyl]amino]sulfonyl]phenyl]diazanyl]-5-hydroxy-3-[2-[4-[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazanyl]- (CA INDEX NAME)

PAGE 1-A

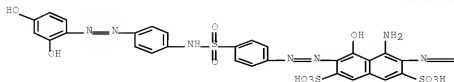


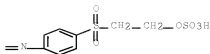
PAGE 1-B



RN 252011-11-3 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[[4-[2-(2,4-dihydroxyphenyl)diazanyl]phenyl]amino]sulfonyl]phenyl]diazanyl]-5-hydroxy-3-[2-[4-[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazanyl]- (CA INDEX NAME)

PAGE 1-A





IT 232011-12-4P

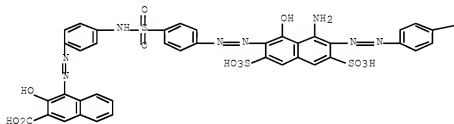
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(navy blue dye; production of polyazo reactive dyes for leather)

RN 252011-12-4 HCAPLUS

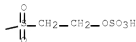
CN 2-Naphthalenecarboxylic acid.

4-[2-[4-[[4-[2-[8-amino-1-hydroxy-3,6-disulfo-7-[2-[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]diazenyl]-2-naphthalenyl]diazenyl]phenyl]sulfonyl]amino]phenyl]diazenyl]-3-hydroxyv- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IPCI C09B0062-513 [ICM,6]; C09B0062-44 [ICM,6,C\*]; C09B0035-38 [ICS,6];  
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[ICS,6,C\*]; C09B0067-22 [ICS,6]; C09B0067-00 [ICS,6,C\*];  
D06P0003-32 [ICS,6]; D06P0001-384 [ICS,6]; D06P0001-38 [ICS,6,C\*];  
C07C0309-50 [ICS,6]; C07C0309-00 [ICS,6,C\*]; D06P0003-10 [ICA,6];  
D06P0003-04 [ICA,6,C\*]; D06P0003-66 [ICA,6]; D06P0003-58  
[ICA,6,C\*]; C07C0317-32 [ICA,6]; C07C0317-00 [ICA,6,C\*]

IPCR C09B0035-00 [I,C\*]; C09B0035-46 [I,A]; C09B0035-64 [I,A];  
C09B0062-44 [I,C\*]; C09B0062-513 [I,A]; C09B0067-00 [I,C\*];  
C09B0067-22 [I,A]

CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
Photographic Sensitizers)  
Section cross-reference(s): 45

ST polvazo reactive dye prodn leather

IT Reactive dyeing

(of leather and other substrates with prepared polyazo dyes)

IT Leather

(production of polyazo reactive dyes for)



## 10/577,776-337287-EIC SEARCH

IT Reactive azo dyes  
(vinyl sulfone; production of polyazo reactive dyes for leather)

IT 252011-02-2P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(black dye; production of polyazo reactive dyes)

IT 252011-06-5P 252011-07-7P  
252011-08-8P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(black dye; production of polyazo reactive dyes for leather)

IT 252011-13-5P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(blue dye; production of polyazo reactive dyes for leather)

IT 252011-09-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dark green dye; production of polyazo reactive dyes for leather)

IT 252011-03-3P 252011-04-4P  
252011-05-5P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dye; production of polyazo reactive dyes)

IT 252011-10-2P 252011-11-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(green dye; production of polyazo reactive dyes for leather)

IT 252011-12-4P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(navy blue dye; production of polyazo reactive dyes for leather)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L39 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1997:500246 HCAPLUS Full-text  
DOCUMENT NUMBER: 127:110290  
ORIGINAL REFERENCE NO.: 127:21259a,21262a  
TITLE: Polyazo dyes and their use  
INVENTOR(S): Lamm, Gunther; Reichelt, Helmut; Wiesenfeldt, Matthias  
PATENT ASSIGNEE(S): BASF A.-G., Germany  
SOURCE: Ger. Offen., 32 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
DE 19548785	A1	19970703	DE 1995-19548785	1995 1227
			<--	
WO 9724405	A1	19970710	WO 1996-EP5632	1996 1216
			<--	

## Page 26

# 10/577,776-337287-EIC SEARCH

product which was coupled with A, resulting in a dye which colored wool and leather in fast blue to navy blue shades.

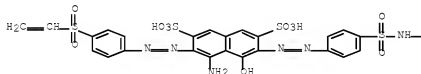
IT 192320-88-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(blue dye; preparation of polyazo dyes for leather and wool)

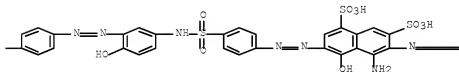
RN 192320-55-1 HCAPLUS

CN 1,7-Naphthalenedisulfonic acid,  
5-amino-3-[2-[4-[[[3-[2-[4-[[[4-[2-[8-amino-7-[2-[4-(  
(ethenylsulfonyl)phenyl]diazenyl]-1-hydroxy-3,6-disulfo-2-  
naphthalenyl]diazenyl]phenyl]sulfonyl]amino]phenyl]diazenyl]-4-  
hydroxyphenyl]amino]sulfonyl]phenyl]diazenyl]-4-hydroxy-6-[2-[2-(3-  
phenyl-1,2,4-oxadiazol-5-yl)-4-sulfophenyl]diazenyl]- (CA INDEX  
NAME)

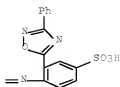
PAGE 1-A



PAGE 1-B



PAGE 1-C



IPCI C09B0033-18 [ICM,6]; C09B0035-64 [ICS,6]; C09B0035-00 [ICS,6,C\*];  
C09B0062-513 [ICS,6]; C09B0062-44 [ICS,6,C\*]; D06P0001-39 [ICS,6];  
D06P0001-384 [ICS,6]; D06P0001-38 [ICS,6,C\*]; C07C0317-32 [ICS,6];  
C07C0317-00 [ICS,6,C\*]; C07C0311-21 [ICS,6]; C07C0311-00  
[ICS,6,C\*]; C07D0271-06 [ICS,6]; C09B0033-10 [ICA,6]; C09B0033-00  
[ICA,6,C\*]; D06P0003-16 [ICA,6]; D06P0003-24 [ICA,6]; D06P0003-32  
[ICA,6]; D06P0003-04 [ICA,6,C\*]; C07C0309-50 [ICA,6]; C07C0309-00

## 10/577,776-337287-EIC SEARCH

[ICA,6,C\*]; C07D0271-06 [ICA,6]; C07D0271-00 [ICA,6,C\*];  
C07D0209-48 [ICA,6]; C07D0413-04 [ICA,6]; C07D0413-00 [ICA,6,C\*];  
C07D0295-10 [ICA,6]; C07D0295-00 [ICA,6,C\*]; C07D0209-46 [ICA,6];  
C07D0209-00 [ICA,6,C\*]  
IPCR C09B0035-00 [I,C\*]; C09B0035-64 [I,A]; C09B0062-44 [I,C\*];  
C09B0062-513 [I,A]  
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
Photographic Sensitizers)  
Section cross-reference(s): 40, 45  
ST polyazo dye prepn wool leather  
IT Azo dyes  
Leather  
(preparation of polyazo dyes for leather and wool)  
IT Textiles  
(wool; preparation of polyazo dyes for leather and wool)  
IT 192320-55-1P 192320-56-2P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(blue dye; preparation of polyazo dyes for leather and  
wool)  
IT 72089-20-4P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(blue gray dye; preparation of polyazo dyes for leather  
and wool)  
IT 192320-59-5P 192320-61-9P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(coupling component; preparation of polyazo dyes for leather  
and wool)  
IT 90-20-0, 1-Amino-8-naphthol-3,6-disulfonic acid 108-45-2,  
1,3-Benzenediamine, reactions 6483-81-4,  
1-Amino-8-naphthol-3,5-disulfonic acid 188357-45-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(coupling component; preparation of polyazo dyes for leather  
and wool)  
IT 192394-99-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(dark blue dye; preparation of polyazo dyes for leather  
and wool)  
IT 7019-01-4, 4-Aminodiphenyl sulfone 21626-70-0,  
4-(Morpholinosulfonyl)aniline 25781-90-2,  
4-(Vinylsulfonyl)aniline 40307-20-8, Phenyl  
4-aminobenzenesulfonate 52569-87-6,  
N-(4-Hydroxyphenyl)-4-aminobenzenesulfonamide 76091-48-0,  
5-(2-Amino-5-sulfophenyl)-3-phenyl-1,2,4-oxadiazole 192320-60-8  
192320-62-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(diazo component; preparation of polyazo dyes for leather  
and wool)  
IT 192320-57-3P  
RL: BYP (Byproduct); TEM (Technical or engineered material use);  
PREP (Preparation); USES (Uses)  
(gray dye byproduct; preparation of polyazo dyes for leather  
and wool)  
IT 192395-00-9P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(gray dye; preparation of polyazo dyes for leather and  
wool)  
IT 16803-97-7, N-(4-Aminophenyl)-4-aminobenzenesulfonamide  
192320-58-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(tetraazo component; preparation of polyazo dyes for leather  
and wool)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE

## 10/577,776-337287-EIC SEARCH

THIS RECORD (3 CITINGS)

L39 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2010 ACS ON STN  
 ACCESSION NUMBER: 1996:126623 HCAPLUS Full-text  
 DOCUMENT NUMBER: 124:148715  
 ORIGINAL REFERENCE NO.: 124:27629a,27632a  
 TITLE: Dyes containing nucleophilic and electrophilic groups and their use in coloration with polymerization  
 INVENTOR(S): Greenwood, David; Renfrew, Andrew Hunter  
 Morris; Brennan, Colin Michael  
 PATENT ASSIGNEE(S): Zeneca Ltd., UK  
 SOURCE: PCT Int. Appl., 35 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9532246	A1	19951130	WO 1995-GB949	1995 0427
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W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GH, ML, MR, NE, SN, TD, TG				
AU 9523143	A	19951218	AU 1995-23143	1995 0427
<--				
EP 759957	A1	19970305	EP 1995-916772	1995 0427
<--				
R: CH, DE, FR, GB, IT, LI				
CN 1151173	A	19970604	CN 1995-193670	1995 0427
<--				
JP 10501007	T	19980127	JP 1995-530111	1995 0427
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PRIORITY APPLN. INFO.:			GB 1994-10035	A 1994 0519
<--				
			WO 1995-GB949	W 1995 0427
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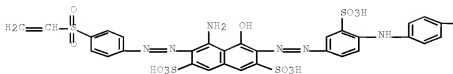
ED Entered STN: 01 Mar 1996

AB A dye comprises mols. which contain a nucleophilic group and an electrophilic group such that (1) the mols. are capable of joining together by formation of a covalent bond between the nucleophilic group of one mol. and the electrophilic group of another mol. when the dye is heated, acidified, or basified, and (2) the nucleophilic group is or comprises a secondary amino group which is free from aryl substituents. Thus, 4-CH<sub>2</sub>:CHSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> was diazotized and coupled with 1-phenylpiperazine to give an azo compound, which dyed leather a fast yellow shade from an aqueous bath acidified with HCO<sub>2</sub>H.

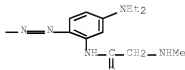
## 10/577,776-337287-EIC SEARCH

IT 173783-54-5P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (black; preparation of polymerizable leather dyes containing nucleophilic and electrophilic groups)  
 RN 173783-54-5 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid, 4-amino-6-[2-[4-[4-[2-[4-(diethylamino)-2-[[2-(methylethylamino)acetyl]amino]phenyl]diazenyl]phenyl]amino]-3-sulfonylphenyl]diazonyl]-3-[2-[4-(ethenylsulfonyl)phenyl]diazonyl]-5-hydroxy- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IPCI C09B0062-503 [ICM,6]; C09B0062-44 [ICM,6,C\*]; C09B0069-10 [ICS,6];  
 C09B0069-00 [ICS,6,C\*]; D06P0001-00 [ICS,6]  
 IPCR C08G0073-00 [I,C\*]; C08G0073-02 [I,A]; C09B0062-44 [I,C\*];  
 C09B0062-503 [I,A]; C09B0069-00 [I,C\*]; C09B0069-10 [I,A];  
 D06P0001-00 [I,C\*]; D06P0001-00 [I,A]; D06P0003-04 [I,C\*];  
 D06P0003-32 [I,A]; D06P0005-02 [I,C\*]; D06P0005-02 [I,A];  
 D06P0005-20 [I,C\*]; D06P0005-20 [I,A]  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
 Photographic Sensitizers)  
 Section cross-reference(s): 35, 45  
 ST polymerizable azo dye leather; electrophilic  
 nucleophilic group polymerizable dye  
 IT Dyes, azo  
 leather  
 (preparation of polymerizable leather dyes containing  
 nucleophilic and electrophilic groups)  
 IT Polymerization  
 (oligomerization, of azo dyes in dyeing of leather  
 with dyes containing nucleophilic and electrophilic groups)  
 IT 173783-54-5P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)  
 (black; preparation of polymerizable leather dyes containing  
 nucleophilic and electrophilic groups)  
 IT 90-20-0, H Acid 92-54-6, 1-Phenylpiperazine 69376-06-3  
 173783-55-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling component; preparation of polymerizable leather  
 dyes containing nucleophilic and electrophilic groups)  
 IT 119-70-0, 4,4'-Diaminodiphenylamine-2-sulfonic acid 18759-96-1,

## 10/577,776-337287-EIC SEARCH

(3-Aminobenzyl)methylamine 25781-90-2, 4-Aminophenyl vinyl sulfone

RL: RCT (Reactant); RACT (Reactant or reagent)  
(diaz component; preparation of polymerizable leather dyes containing nucleophilic and electrophilic groups)

IT 173783-53-4P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of polymerizable leather dyes containing nucleophilic and electrophilic groups)

IT 173783-52-3P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(red; preparation of polymerizable leather dyes containing nucleophilic and electrophilic groups)

IT 173783-51-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(yellow; preparation of polymerizable leather dyes containing nucleophilic and electrophilic groups)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:652367 HCAPLUS Full-text

DOCUMENT NUMBER: 124:10879

ORIGINAL REFERENCE NO.: 124:2235a,2238a

TITLE: Trisazo compounds and their use for dyeing and in inks

INVENTOR(S): Ogino, Kazuya; Tamura, Yuriko; Omura, Takashi; Fujita, Mahito; Kawashita, Hideo; Aburada, Koji

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan; Taoka Chemical Co., Ltd.

SOURCE: Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 645434	A1	19950329	EP 1994-115154	1994 0926

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R: CH, DE, FR, GB, IT, LI	JP 07166081	A	19950627	JP 1994-220012	1994 0914

US 5489671	A	19960206	US 1994-313642	1994 0927

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PRIORITY APPLN. INFO.:	JP 1993-241285	A	1993 0928

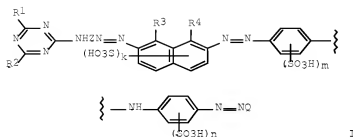
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 124:10879

ED Entered STN: 04 Jul 1995

GI



AB Salts of trisazo compds. I [Q is (un)substituted Ph or naphthyl; R1, R2 = OR, SR, NR2, heterocyclyl linked through N (each R = H, (un)substituted alkyl, Ph, or naphthyl); R3, R4 = OH, NH2; R5 ≠ R6; Z = (un)substituted phenylene; k = 1, 2; m, n = 0, 1; m ≠ n] can be used for dyeing fibrous material, paper, or leather and give (jet-printing) inks which are excellent in storage stability and give a clear black printed image having excellent water resistance and lightfastness. Condensation of cyanuric chloride with m-H2NC6H4NHAc and 2 mol Et2N(CH2)3NH2, deacetylation, diazotization and coupling under weakly acidic conditions with H Acid  $\leftarrow$  4,2-H2N(HO3S)C6H3NHC6H4NH2-4  $\rightarrow$  m-HOC6H4NH2 gave a I salt with  $\lambda_{\text{max}}$  630 nm.

IT 171370-24-4P

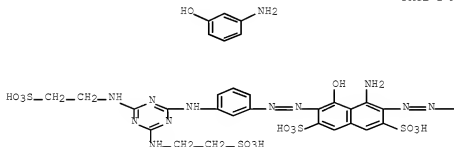
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation of trisazo compds. for coloration of jet-printing inks)

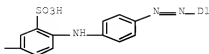
RN 171370-24-4 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-sulphophenyl]azo]-6-[[[3-[[[4,6-bis[(2-sulfoethyl)amino]-1,3,5-triazin-2-yl]amino]phenyl]azo]-5-hydroxy- (9CI) (CA INDEX NAME)

PAGE 1-A







IPCI C09B0035-46 [ICM,6]; C09B0035-00 [ICM,6,C\*]; C09D0011-00 [ICS,6];  
 C09D0011-16 [ICS,6]  
 IPCR C09B0035-00 [I,C\*]; C09B0035-46 [I,A]; C09D0011-00 [I,C\*];  
 C09D0011-00 [I,A]  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
 Photographic Sensitizers)  
 Section cross-reference(s): 40, 42, 43, 45  
 IT Leather  
 (trisazo compds. for dyeing of)  
 IT 171370-23-3P 171370-24-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)  
 (preparation of trisazo compds. for coloration of jet-printing inks)  
 OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE  
 THIS RECORD (1 CITINGS)

L39 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1995:267119 HCAPLUS Full-text  
 DOCUMENT NUMBER: 122:108661  
 ORIGINAL REFERENCE NO.: 122:20413a,20416a  
 TITLE: Trisazo dyes, dyeing fibers, paper and  
 leather therewith, and inks containing  
 the same  
 INVENTOR(S): Tamura, Yuriko; Ogino, Kazuya; Fujita,  
 Masato; Fujita, Masato; Harada, Naoki;  
 Kawashita, Hideo; Yuda, Koji  
 PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06172667	A	19940621	JP 1992-327734	1992 1208

PRIORITY APPLN. INFO.: JP 1992-327734 1992  
 1208

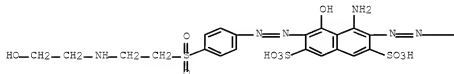
OTHER SOURCE(S): MARPAT 122:108661  
 ED Entered STN: 01 Jan 1995  
 GI

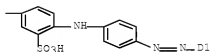
PAGE 1-A



D1-NH2

D1\_ OH



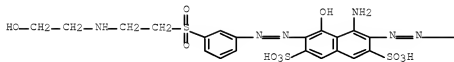


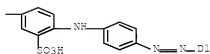
RN 159959-59-8 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[4-[[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-  
 sulfo]phenyl]azo]-5-hydroxy-6-[[3-[[2-[(2-  
 hydroxyethyl)amino]ethyl]sulfonyl]phenyl]azo]- (9CI) (CA INDEX  
 NAME)



D1-NH<sub>2</sub>

D1-OH



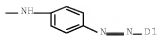
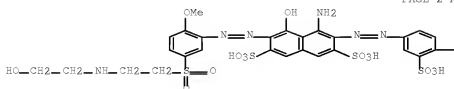


RN 159959-60-1 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[4-[[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-  
 sulphophenyl]azo]-5-hydroxy-6-[[5-[[2-[(2-  
 hydroxyethyl)amino]ethyl]sulfonyl]-2-methoxyphenyl]azo]- (9CI)  
 (CA INDEX NAME)



D1-NH<sub>2</sub>

D1-OH



# 10/577,776-337287-EIC SEARCH

RN 159959-61-2 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-6-[[3-[[[2-[(2-hydroxyethyl)amino]ethyl)sulfonyl]-4-methoxyphenyl]azo]- (9CI)  
 (CA INDEX NAME)

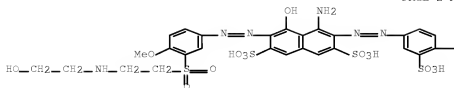
PAGE 1-A



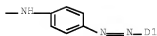
D1-NH2

D1-OH

PAGE 2-A



PAGE 2-B

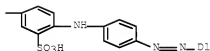
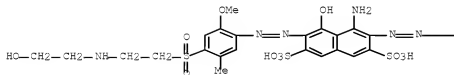


RN 159959-62-3 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-6-[[4-[[[2-[(2-hydroxyethyl)amino]ethyl)sulfonyl]-2-methoxy-5-methylphenyl]azo]- (9CI) (CA INDEX NAME)



D1-NH2

D1-OH

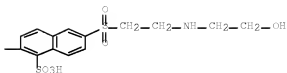
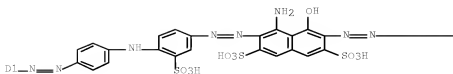


RN 159959-63-4 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-6-[[6-[[2-[(2-hydroxyethyl)amino]ethyl)sulfonyl]-1-sulfo-2-naphthalenyl]azo]-(9CI) (CA INDEX NAME)



D1-NH2

D1-OH



IPCI C09B0035-38 [ICM,5]; C09B0035-00 [ICM,5,C\*]; C09D0011-00 [ICS,5];  
 D06P0001-06 [ICS,5]; D06P0001-02 [ICS,5,C\*]  
 IPCR C09B0035-00 [I,C\*]; C09B0035-38 [I,A]; C09D0011-00 [I,C\*];  
 C09D0011-00 [I,A]; C09D0011-02 [I,C\*]; C09D0011-02 [I,A];  
 D06P0001-02 [I,C\*]; D06P0001-06 [I,A]  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
 Photographic Sensitizers)  
 ST trisazo reactive dye; azo reactive dye; fiber azo reactive dye;  
 paper azo reactive dye; leather azo reactive dye; ink  
 azo reactive dye; rayon azo reactive dye  
 IT Inks  
 Paper  
 (trisazo dyes for fibers, paper, leather and inks)  
 IT Rayon, processes  
 RL: PEP (Physical, engineering or chemical process); PROC  
 (Process)  
 (trisazo dyes for fibers, paper, leather and inks)  
 IT Dyes, reactive  
 (azo, trisazo dyes for fibers, paper, leather and  
 inks)  
 IT 159959-58-7P 159959-59-8P  
 159959-60-1P 159959-61-2P  
 159959-62-3P 159959-63-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)  
 (trisazo dyes for fibers, paper, leather and inks)  
 IT 90-20-0, H Acid 119-70-0, 4,4'-Diaminodiphenylamine-2-sulfonic  
 acid 141-43-5, Monoethanolamine, reactions 591-27-5,  
 m-Aminophenol 2494-89-5, 4-(2-Sulfatoethylsulfonyl)aniline  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (trisazo dyes for fibers, paper, leather and inks)  
 OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE  
 THIS RECORD (1 CITINGS)  
 L39 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2010 ACS ON STN  
 ACCESSION NUMBER: 1994:79435 HCAPLUS Full-text  
 DOCUMENT NUMBER: 120:79435  
 ORIGINAL REFERENCE NO.: 120:14265a,14268a  
 TITLE: Trisazo compounds, their use in dyeing fibers  
 or paper or leather, and

## 10/577,776-337287-EIC SEARCH

INVENTOR(S): jet-printing inks containing them  
Ogino, Kazuya; Tamura, Yuriko; Harada, Naoki;  
Omura, Takashi; Kawashita, Hideo; Oota,  
Mitsuhiro

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan; Taoka  
Chemical Co Ltd

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

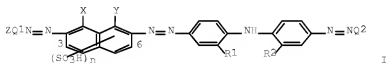
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05246977	A	19930924	JP 1992-46811	1992 0304
			<--	
PRIORITY APPLN. INFO.:			JP 1992-46811	1992 0304
			<--	

OTHER SOURCE(S): MARPAT 120:79435

ED Entered STN: 19 Feb 1994

GI



AB The compds. have free-acid form I [Q1 = (un)substituted phenylene or naphthylene; Q2 = (un)substituted Ph or naphthyl; Z = SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH, SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>SO<sub>3</sub>H; n = 1, 2; one of X and Y = OH, while the other = NH<sub>2</sub>; one of R1 and R2 is H, while the other = SO<sub>3</sub>H; when X = OH and Y = NH<sub>2</sub>, R1 = H and R2 = SO<sub>3</sub>H]. 4-HOCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> was diazotized, coupled with H acid, and the resulting coupling product and 3-HOC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> were coupled with tetrazotized 4,4'-diaminodiphenylamine-2-sulfonic acid to give I (Z = HOCH<sub>2</sub>CH<sub>2</sub>SO<sub>2</sub>; Q1 = p-C<sub>6</sub>H<sub>4</sub>; n = 2 at the 3- and 6-positions; X = OH; Y = NH<sub>2</sub>; R1 = SO<sub>3</sub>H; R2 = H; Q2 = aminohydroxyphenyl), λ<sub>max</sub> 680 nm, bluish black in paper.

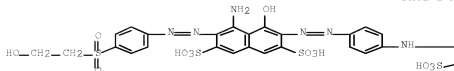
IT 152333-76-1P

RL: PREP (Preparation)  
(manufacture of, as black dye for paper)

RN 152333-76-1 HCAPLUS

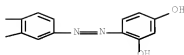
CN 2,7-Naphthalenedisulfonic acid,  
4-amino-6-[2-[4-[[4-[2-(2,4-dihydroxyphenyl)diazenyl]-2-sulfonyl]amino]phenyl]diazenyl]-5-hydroxy-3-[2-[4-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

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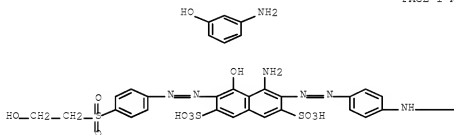


PAGE 1-B

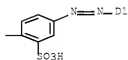


IT 152689-99-1P  
 RL: PREP (Preparation)  
 (manufacture of, as black dye for paper and jet-printing inks)  
 RN 152689-99-1 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[4-[[4-[(aminohydroxyphenyl)azo]-2-sulfonyl]amino]phenyl]azo]-5-hydroxy-6-[[4-[(2-hydroxyethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

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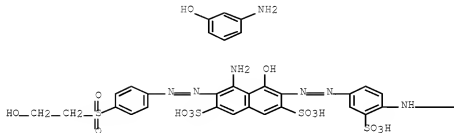


IT 152690-00-1P  
 RL: PREP (Preparation)  
 (manufacture of, as black dye for paper and rayon and jet-printing inks)  
 RN 152690-00-1 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[[4-[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfonyl]azo]-5-hydroxy-3-[[4-[(2-

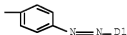
## 10/577,776-337287-EIC SEARCH

hydroxyethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

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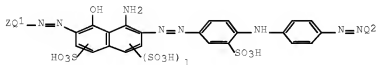


IPCI C07C0309-50 [ICM,5]; C07C0309-00 [ICM,5,C\*]; C09B0035-46 [ICS,5];  
 C09B0035-00 [ICS,5,C\*]; C09D0011-00 [ICS,5]; D06P0001-39 [ICS,5];  
 D06P0003-32 [ICS,5]; D06P0003-04 [ICS,5,C\*]; D21H0017-67 [ICS,5];  
 D21H0017-00 [ICS,5,C\*]  
 IPCR C09B0035-00 [I,C\*]; C09B0035-46 [I,A]; C07C0309-00 [I,C\*];  
 C07C0309-50 [I,A]; C09D0011-00 [I,C\*]; C09D0011-00 [I,A];  
 D06P0001-39 [I,C\*]; D06P0001-39 [I,A]; D06P0003-04 [I,C\*];  
 D06P0003-32 [I,A]; D21H0017-00 [I,C\*]; D21H0017-67 [I,A]  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
 Photographic Sensitizers)  
 ST azo dye paper leather ink  
 IT Dyeing  
 (of fibers and leather and paper with black trisazo  
 compds.)  
 IT Leather  
 Paper  
 (trisazo dyes for)  
 IT Dyes, azo  
 (trisazo, for fibers and leather and paper and  
 jet-printing inks)  
 IT 152333-76-1P  
 RL: PREP (Preparation)  
 (manufacture of, as black dye for paper)  
 IT 152689-99-1P  
 RL: PREP (Preparation)  
 (manufacture of, as black dye for paper and jet-printing inks)  
 IT 152690-00-1P  
 RL: PREP (Preparation)  
 (manufacture of, as black dye for paper and rayon and jet-printing  
 inks)

# 10/577,776-337287-EIC SEARCH

L39 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2010 ACS ON STN  
ACCESSION NUMBER: 1993:193626 HCAPLUS Full-text  
DOCUMENT NUMBER: 118:193626  
ORIGINAL REFERENCE NO.: 118:33249a,33252a  
TITLE: Trisazo dyes, their preparation and use in dyeing and printing, and inks containing them  
INVENTOR(S): Ogino, Kazuya; Akahori, Kingo; Harada, Naoki; Kayane, Yutaka; Kawashita, Hideo; Ohta, Mituhiro  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
SOURCE: Eur. Pat. Appl., 25 pp.  
DOCUMENT TYPE: CODEN: EPXXDW  
LANGUAGE: Patent  
FAMILY ACC. NUM. COUNT: English  
PATENT INFORMATION: 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 518266	A1	19921216	EP 1992-109702	1992 0609
<--				
R: CH, DE, FR, GB, IT, LI, NL JP 04363363	A	19921216	JP 1991-138010	1991 0610
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US 5488101	A	19960130	US 1992-894561	1992 0605
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PRIORITY APPLN. INFO.:			JP 1991-138010	A 1991 0610
<--				
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT				
OTHER SOURCE(S): MARPAT 118:193626				
ED Entered STN: 14 May 1993				
GI				



AB Black dyes I [Q1 = (un)substituted phenylene or naphthylene; Q2 = (un)substituted Ph or naphthyl; Z = SO2CH2CH2OH, SO2CH2CH2SO3H; 1 = 0, 1] or their salts have suitable solubility for use in jet-printing inks without the involvement of benzidine in their manufacture. Thus, 4,4'-diaminodiphenylamine-2-sulfonic acid was tetrazotized, coupled with 1 mol H acid under acidic conditions, the monoazo intermediate coupled with diazotized 4-HOCH2CH2SO2C6H4NH2 under alkaline conditions, and the disazo diazonium intermediate coupled with 3-H2NC6H4OH under alkaline conditions to give a I with  $\lambda_{max}$  625 nm, a jet-printing ink from which showed no nozzle clogging for a long time.

IT 147140-52-1P 147140-53-2P  
147140-54-3P 147140-55-4P  
147140-56-5P 147140-57-6P  
147140-58-7P 147140-59-8P

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147140-60-1P 147140-61-2P  
 147140-62-3P 147140-63-4P  
 147160-50-7P 147281-93-4P  
 147281-94-5P

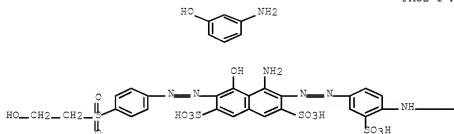
RL: PREP (Preparation)

(manufacture of, as black dye for jet-printing inks)

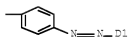
RN 147140-52-1 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-6-[[4-[(2-hydroxyethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

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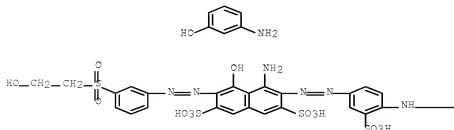
PAGE 1-B



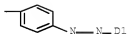
RN 147140-53-2 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
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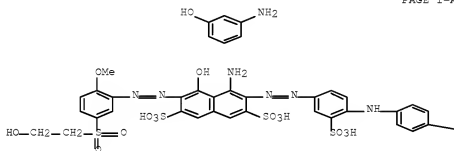
PAGE 1-B



RN 147140-54-3 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[[4-[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-6-[[5-[(2-hydroxyethyl)sulfonyl]-2-methoxyphenyl]azo]- (9CI) (CA INDEX NAME)

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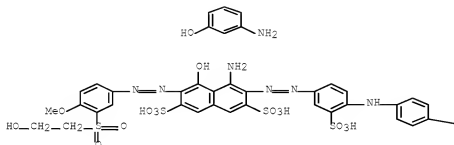
RN 147140-55-4 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[[4-[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-6-[[3-[(2-hydroxyethyl)sulfonyl]-4-

# 10/577,776-337287-EIC SEARCH

methoxyphenyl]azo]- (9CI) (CA INDEX NAME)

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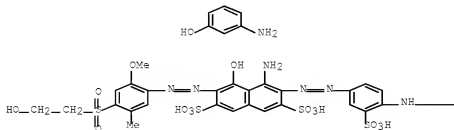


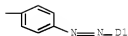
PAGE 1-B

—N=N—D1

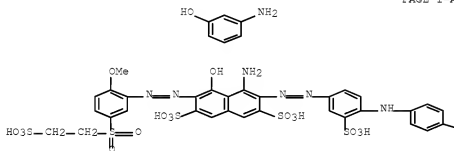
RN 147140-56-5 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-  
 sulfophenyl]azo]-5-hydroxy-6-[[[4-[(2-hydroxyethyl)sulfonyl]-2-  
 methoxy-5-methylphenyl]azo]- (9CI) (CA INDEX NAME)

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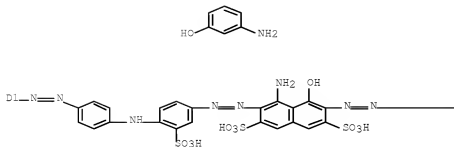


RN 147140-57-6 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-  
 sulfophenyl]azo]-5-hydroxy-6-[[2-methoxy-5-[(2-  
 sulfoethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

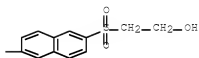


RN 147140-58-7 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-  
 sulfophenyl]azo]-5-hydroxy-6-[[6-[(2-hydroxyethyl)sulfonyl]-2-  
 naphthalenyl]azo]- (9CI) (CA INDEX NAME)

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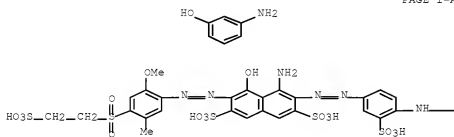
PAGE 1-B



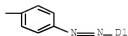
RN 147140-59-8 HCAPLUS

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[[4-[[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfo-  
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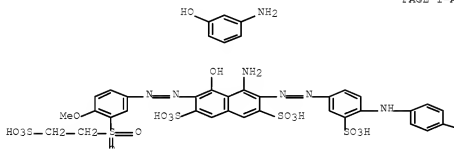
PAGE 1-A





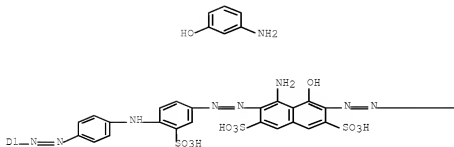


RN 147140-60-1 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[4-[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-  
 sulfophenyl]azo]-5-hydroxy-6-[[4-methoxy-3-[(2-  
 sulfoethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

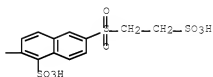


RN 147140-61-2 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[4-[[4-(aminohydroxyphenyl)azo]phenyl]amino]-3-  
 sulfophenyl]azo]-5-hydroxy-6-[[1-sulfo-6-[(2-sulfoethyl)sulfonyl]-  
 2-naphthalenyl]azo]- (9CI) (CA INDEX NAME)

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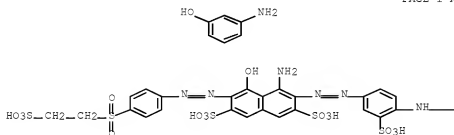
PAGE 1-B

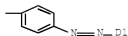


RN 147140-62-3 HCAPLUS

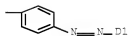
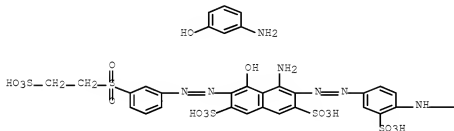
CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[[4-[[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-sulfophenyl]azo]-5-hydroxy-6-[[4-[(2-sulfoethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

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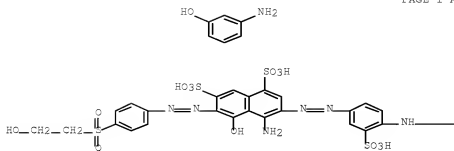


RN 147140-63-4 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[4-[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-  
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 sulfoethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

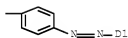


RN 147160-50-7 HCAPLUS  
 CN 1,7-Naphthalenedisulfonic acid,  
 4-amino-3-[[4-[[4-[(aminohydroxyphenyl)azo]phenyl]amino]-3-  
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 hydroxyethyl)sulfonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

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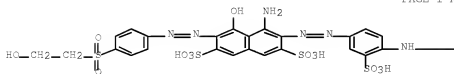


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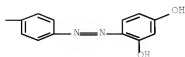


RN 147281-93-4 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-3-[2-[4-[[4-(2-(2,4-dihydroxyphenyl)diazenyl]phenyl)amino]-  
 3-sulfonyl]diazenyl]-5-hydroxy-6-[2-[4-[(2-  
 hydroxyethyl)sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)

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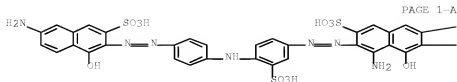
PAGE 1-B



RN 147281-94-5 HCAPLUS

## 10/577,776-337287-EIC SEARCH

CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[2-[4-[4-[2-(6-amino-1-hydroxy-3-sulfo-2-naphthalenyl)diazenyl]phenyl]amino]-3-sulfonyl]diazenyl]-5-hydroxy-6-[2-[4-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]- (CA INDEX NAME)



IPCI C09B0035-46 [ICM,5]; C09B0035-00 [ICM,5,C\*]; C09B0062-513 [ICS,5];  
C09B0062-44 [ICS,5,C\*]; C09D0011-00 [ICS,5]  
IPCR C09B0033-00 [I,C\*]; C09B0033-22 [I,A]; C09B0035-00 [I,C\*];  
C09B0035-46 [I,A]; C09B0062-44 [I,C\*]; C09B0062-513 [I,A];  
C09D0011-00 [I,C\*]; C09D0011-00 [I,A]; C09D0011-02 [I,C\*];  
C09D0011-02 [I,A]; D06P0001-02 [I,C\*]; D06P0001-06 [I,A];  
D06P0001-38 [I,C\*]; D06P0001-384 [I,A]; D06P0003-04 [I,C\*];  
D06P0003-32 [I,A]; D06P0003-58 [I,C\*]; D06P0003-66 [I,A]  
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and  
Photographic Sensitizers)  
Section cross-reference(s): 40, 42, 43, 45  
IT Leather  
Paper  
(dyes for, black trisazo compds. as)  
IT Dyes, azo  
(trisazo, black, for fibers, inks, leather and paper)  
IT 147140-52-1P 147140-53-2P  
147140-54-3P 147140-55-4P  
147140-56-5P 147140-57-6P  
147140-58-7P 147140-59-8P  
147140-60-1P 147140-61-2P  
147140-62-3P 147140-63-4P  
147160-50-7P 147281-93-4P  
147281-94-5P  
RL: PREP (Preparation)  
(manufacture of, as black dye for jet-printing inks)  
OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE  
THIS RECORD (4 CITINGS)

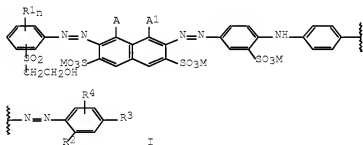
L39 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1992:450760 HCAPLUS Full-text  
DOCUMENT NUMBER: 117:50760  
ORIGINAL REFERENCE NO.: 117:9037a,9040a  
TITLE: Water-soluble trisazo dyes, their preparation  
and use  
INVENTOR(S): Bauer, Wolfgang; Ritter, Josef; Steckelberg,  
Willi

## 10/577,776-337287-EIC SEARCH

PATENT ASSIGNEE(S): Cassella A.-G., Germany  
 SOURCE: Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 471233	A1	19920219	EP 1991-112670	1991 0727
EP 471233	B1	19941130	<--	
R: CH, DE, ES, FR, GB, IT, LI				
DE 4025611	A1	19920220	DE 1990-4025611	1990 0813
US 5110917	A	19920505	US 1991-740126	1991 0805
JP 04288371	A	19921013	JP 1991-201953	1991 0812
JP 2992376	B2	19991220	<--	
PRIORITY APPLN. INFO.:			DE 1990-4025611	A 1990 0813

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): MARPAT 117:50760  
 ED Entered STIN: 08 Aug 1992  
 GI



AB Trisazo compds. I [A, Al = OH, NH2; A ≠ Al; M = alkali metal, ammonium; R1 = Me, Et, OMe, OEt, OH, halogen, CO2H; R2 = OH, NH2, NHCH2CH2OH, NHCH2CO2H; R3 = H, OH, NH2, NHCH2CH2OH, NHCH2CO2H, NHCONH2, NHPh; R4 = H, Me, Et, O(CH2)mOMe, O(CH2)mOEt, SO3H; m = 1-2; n = 0-2] are useful for dyeing leather and in writing and jet-printing inks. Thus, 4,4'-diaminodiphenylamine-2-sulfonic acid was tetrazotized and coupled 1:1 with 1-amino-8-hydroxy-3,6-naphthalenedisulfonic acid, the monoazo diazonium salt was coupled with diazotized 3-H2NC6H4SO2CH2CH2OH, and the product was coupled with 3-H2NC6H4OH and neutralized with NaOH to give a mixture of I with R2 = NH2, R3 = OH and I with R2 = OH, R3 = NH2, in both of which A = OH, Al = NH2, R4 = H, M = Na, and n = 0.

# 10/577,776-337287-EIC SEARCH

The mixture dyed leather and polyamide fibers in black shades with better lightfastness than the analogous mixture missing the SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH group.

IT 142388-06-5 142388-07-6  
142388-08-7 142388-09-8

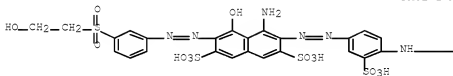
RL: USES (Uses)

(preparation of mixture containing, as black dye for leather and inks)

RN 142388-06-5 HCAPLUS

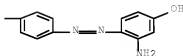
CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[2-[4-[[4-[2-(2-amino-4-  
hydroxyphenyl)diazenyl]phenyl]amino]-3-sulphophenyl]diazenyl]-5-  
hydroxy-6-[2-[3-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]-,  
sodium salt (1:3) (CA INDEX NAME)

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● 3 Na

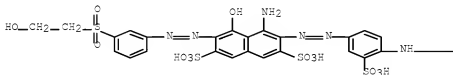
PAGE 1-B



RN 142388-07-6 HCAPLUS

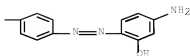
CN 2,7-Naphthalenedisulfonic acid,  
4-amino-3-[2-[4-[[4-[2-(4-amino-2-  
hydroxyphenyl)diazenyl]phenyl]amino]-3-sulphophenyl]diazenyl]-5-  
hydroxy-6-[2-[3-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]-,  
sodium salt (1:3) (CA INDEX NAME)

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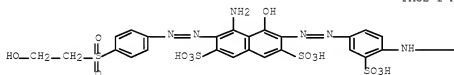
● 3 Na

PAGE 1-B



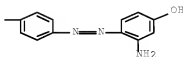
RN 142388-08-7 HCAPLUS  
 CN 2,7-Naphthalenedisulfonic acid,  
 4-amino-6-[2-[4-[[4-[2-(2-amino-4-  
 hydroxyphenyl)diazenyl]phenyl]amino]-3-sulphophenyl]diazenyl]-5-  
 hydroxy-3-[2-[4-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]-,  
 lithium salt (1:3) (CA INDEX NAME)

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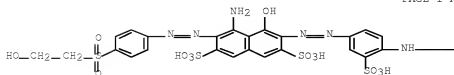
● 3 L1

PAGE 1-B

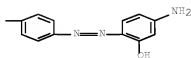


RN 142388-09-8 HCAPLUS  
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 4-amino-6-[2-[4-[[4-[2-(4-amino-2-  
 hydroxyphenyl)diazenyl]phenyl]amino]-3-sulphophenyl]diazenyl]-5-  
 hydroxy-3-[2-[4-[(2-hydroxyethyl)sulfonyl]phenyl]diazenyl]-,  
 lithium salt (1:3) (CA INDEX NAME)





● 3 L1



IPCI C09B0062-513 [ICM,5]; C09B0062-44 [ICM,5,C\*]; D06P0001-384 [ICS,5]; D06P0001-38 [ICS,5,C\*]  
 IPCR C09B0035-38 [I,A]; C09B0035-00 [I,C\*]; C09B0035-46 [I,A]; C09B0062-44 [I,C\*]; C09B0062-513 [I,A]; C09D0011-00 [I,C\*]; C09D0011-00 [I,A]; C09D0011-02 [I,C\*]; C09D0011-02 [I,A]  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)  
 ST trisazo dye leather; ink writing trisazo dye; jet printing ink trisazo dye  
 IT Leather  
     (dyes for, water-soluble trisazo compds. with hydroxyethylsulfonyl groups as)  
 IT Dyes, azo  
     (trisazo, water-soluble, for leather and inks)  
 IT 142388-06-5 142388-07-6  
 142388-08-7 142388-09-8  
 RL: USES (Uses)  
     (preparation of mixture containing, as black dye for leather and inks)

L39 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1971:422469 HCAPLUS Full-text  
 DOCUMENT NUMBER: 75:22469  
 ORIGINAL REFERENCE NO.: 75:3569a,3572a  
 TITLE: Reactive dyes  
 INVENTOR(S): Chekalin, M. A.; Nikolaeva, N. F.; Sidneva, K. M.; Bojno-Rodzevich, V. P.  
 PATENT ASSIGNEE(S): Scientific-Research Institute of Organic Intermediates and Dyes  
 SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztzy, Tovarnye Znaki 1970, 47(36), 95.  
 CODEN: URXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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## 10/577,776-337287-EIC SEARCH

SU 288202

19701203

SU

1965

0520

&lt;--

ED Entered STN: 12 May 1984

GI For diagram(s), see printed CA Issue.

AB Reactive dyes, for proteinaceous fibers and leather, of the general formula I, where R1 = SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OSO<sub>3</sub>H or H; R2 = the same or different members of the groups Cl, SO<sub>3</sub>H, CO<sub>2</sub>H, CH<sub>3</sub>, SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH, SO<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>OH, but not OH and NH<sub>2</sub> groups or substituted OH or NH<sub>2</sub> groups; R3 = H or the same or different N:NA groups where A = an aromatic group which could contain the R1 and R2 groups; n = a whole number from 0 to 3, were prepared by treating 2 moles of a diazonium compound of the general formula II with a Na<sub>2</sub>SO<sub>3</sub> solution.

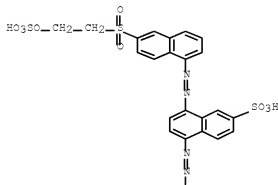
IT 31771-14-9P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation of)

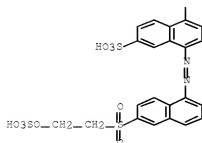
RN 31771-14-9 HCAPLUS

CN 2-Naphthalenesulfonic acid,  
5,5'-azobis[8-[[6-[(2-hydroxyethyl)sulfonyl]-1-naphthyl]azo]-,  
bis(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

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PAGE 2-A



IPCI C09B

CC 40 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

ST protein fiber dye; dye reactive; leather dye; azo dye

## 10/577,776-337287-EIC SEARCH

prepn  
IT 30757-99-4P 31771-14-9P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation of)

L39 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1971:113232 HCAPLUS Full-text  
DOCUMENT NUMBER: 74:113232  
ORIGINAL REFERENCE NO.: 74:18327a,18330a  
TITLE: Fiber-reactive azo dyes  
INVENTOR(S): Chekalin, M. A.; Nikolaeva, N. F.; Sidneva, K.  
M.; Bojno-Rodzevich, V. P.  
PATENT ASSIGNEE(S): State Scientific-Research Institute of Organic  
Intermediates and Dyes  
SOURCE: Fr., 19 pp.  
CODEN: FRXXAK  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1601866		19701030	FR	1968 1112

GB 1270644

GB

ED Entered STN: 12 May 1984

GI For diagram(s), see printed CA Issue.

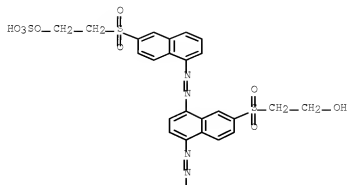
AB Fiber-reactive azo dyes (I, where x = 1 or 0) and similar dyes, useful for dyeing wool, silk, leather, cellulose, etc. in yellow, orange, and brown shades, were prepared, for example, by treatment of diazotized 6-(2-hydroxyethylsulfonyl)-1-naphthylamine with Na sulfite and H<sub>2</sub>SO<sub>4</sub>, giving I (x = n = 0). Also prepared were approx. 20 other I having n = 0, 2, or 4, and R<sub>1</sub> = H, OH, SO<sub>3</sub>H, SO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH, SO<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>OSO<sub>3</sub>H, or SO<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>OH.

IT 31715-24-9P 31715-26-1P  
31715-33-0P 31771-14-9P, 2-Naphthalenesulfonic  
acid, 5,5'-azobis[8-[[6-[(2-hydroxyethyl)sulfonyl]-1-naphthyl]azo]-  
, bis(hydrogen sulfate) (ester) 31831-39-7P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation of)

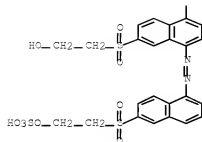
RN 31715-24-9 HCAPLUS

CN Ethanol, 2,2'-[azobis[[8-[[6-[(2-hydroxyethyl)sulfonyl]-1-naphthyl]azo]-5,2-naphthylene]sulfonyl]]di-, bis(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

PAGE 1-A

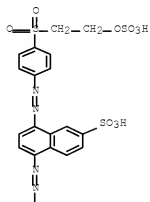


PAGE 2-A

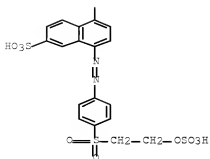


RN 31715-26-1 HCAPLUS  
 CN 2-Naphthalenesulfonic acid,  
 5,5'-azobis[8-[[p-[(2-hydroxyethyl)sulfonyl]phenyl]azo]-,  
 bis(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

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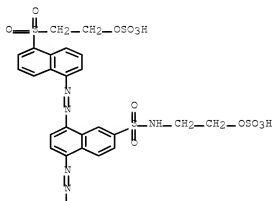
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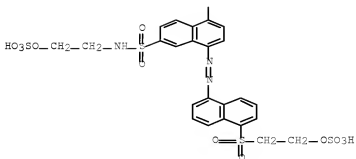
RN 31715-33-0 HCAPLUS

CN 2-Naphthalenesulfonamide, N-[2-(sulfooxy)ethyl]-5-[2-[6-[[[2-(sulfooxy)ethyl]amino)sulfonyl]-4-[2-[5-[[[2-(sulfooxy)ethyl]sulfonyl]-1-naphthalenyl]diazenyl]-1-naphthalenyl]diazenyl]-8-[2-[5-[[[2-(sulfooxy)ethyl]sulfonyl]-1-naphthalenyl]diazenyl]- CA INDEX NAME)

PAGE 1-A



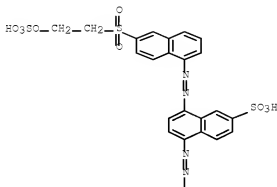
PAGE 2-A



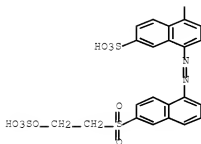
10/577,776-337287-EIC SEARCH

RN 31771-14-9 HCAPLUS  
 CN 2-Naphthalenesulfonic acid,  
 5,5'-azobis[8-[[6-[(2-hydroxyethyl)sulfonyl]-1-naphthyl]azo]-,  
 bis(hydrogen sulfate) (ester) (8CI) (CA INDEX NAME)

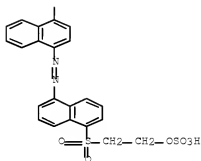
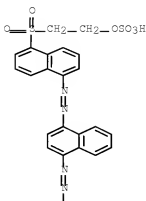
PAGE 1-A



PAGE 2-A



RN 31831-39-7 HCAPLUS  
 CN 2-Naphthalenesulfonic acid, 5,5' (or 8,8')-azobis[8 (or  
 5)-[[5-[(2-hydroxyethyl)sulfonyl]-1-naphthyl]azo]-, bis(hydrogen  
 sulfate) (ester) (8CI) (CA INDEX NAME)



2 [ Di-OSO<sub>3</sub>H ]

IPCI C09B; D06P

IPCR C09B0062-44 [I,C\*]; C09B0062-453 [I,A]

CC 40 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

IT 31631-66-0P 31631-67-1P 31718-24-9P 31715-25-0P

31718-26-1P 31715-27-2P 31715-28-3P 31715-29-4P

31715-30-7P 31715-31-8P 31715-32-9P 31715-33-0P

31771-14-9P, 2-Naphthalenesulfonic acid,  
5,5'-azobis[8-[[[6-[(2-hydroxyethyl)sulfonyl]-1-naphthyl]azo]-,  
bis(hydrogen sulfate) (ester) 31831-39-7P

33537-58-5P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(preparation of)

# 10/577,776-337287-EIC SEARCH

## FULL SEARCH HISTORY

=> d his nofile

(FILE 'HOME' ENTERED AT 13:16:21 ON 20 JUL 2010)

FILE 'HCAPLUS' ENTERED AT 13:16:54 ON 20 JUL 2010

E US20070033746/PN

L1 1 SEA SPE=ON ABB=ON PLU=ON US20070033746/PN

D ALL

SEL AU

L2 134 SEA SPE=ON ABB=ON PLU=ON ("ERHARD, REINER"/AU OR  
"KIESOW, HARALD"/AU OR "SOMOGYI, LASZLO"/AU OR  
"STREICHER, ROLF"/AU OR "ZAMPONI, ANDREA"/AU)

FILE 'ZCAPLUS' ENTERED AT 13:18:09 ON 20 JUL 2010

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L5 QUE SPE=ON ABB=ON PLU=ON SOMOGYI L7/AU

L6 QUE SPE=ON ABB=ON PLU=ON STREICHER R2/AU

L7 QUE SPE=ON ABB=ON PLU=ON ZAMPONI A7/AU

L8 QUE SPE=ON ABB=ON PLU=ON L3 AND L4 AND L5 AND L6  
AND L7

FILE 'HCAPLUS' ENTERED AT 13:20:17 ON 20 JUL 2010

L9 1 SEA SPE=ON ABB=ON PLU=ON L3 AND L4 AND L5 AND L6

AND L7

D SCA

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L7)

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L7)

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L15 6 SEA SPE=ON ABB=ON PLU=ON L7 AND ((L3 OR L4 OR L5 OR  
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D SCA

DEL SEL

SEL L16 RN

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108-45-2/BI OR 108-46-3/BI OR 108-95-2/BI OR 1115-30-6/  
BI OR 112-76-5/BI OR 112-77-6/BI OR 117-62-4/BI OR  
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OR 1219710-14-1/BI OR 1219710-15-2/BI OR 1219710-16-3/B  
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OR 1219710-35-6/BI OR 1219710-36-7/BI OR 1219710-37-8/B  
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# 10/577,776-337287-EIC SEARCH

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16803-97-7/BI OR 20074-69-5/BI OR 2494-88-4/BI OR
260-94-6/BI OR 26635-93-8/BI OR 3963-80-2/BI OR
42986-22-1/BI OR 504-65-4/BI OR 574-93-6/BI OR
588-59-0/BI OR 65461-91-8/BI OR 70380-58-4/BI OR
7439-89-6/BI OR 7440-50-8/BI OR 7632-00-0/BI OR
7664-93-9/BI OR 808139-69-7/BI OR 808139-73-3/BI OR
808139-74-4/BI OR 808139-75-5/BI OR 808139-77-7/BI OR
808139-78-8/BI OR 808139-79-9/BI OR 808139-80-2/BI OR
808139-81-3/BI OR 808139-83-5/BI OR 808139-84-6/BI OR
808139-85-7/BI OR 831-52-7/BI OR 84-89-9/BI OR
882731-22-8/BI OR 882731-23-9/BI OR 90-20-0/BI OR
91-29-2/BI OR 913080-14-5/BI OR 96-67-3/BI OR 98-33-9/B
I OR 99-57-0/BI)
L18      88 SEA SPE=ON ABB=ON PLU=ON L17 AND S/ELS
FILE 'LREGISTRY' ENTERED AT 13:25:30 ON 20 JUL 2010
L19      STR
FILE 'REGISTRY' ENTERED AT 13:31:48 ON 20 JUL 2010
L20      50 SEA SSS SAM L19
L21      13 SEA SPE=ON ABB=ON PLU=ON L18 AND N>5
          D SCA
L22      1 SEA SPE=ON ABB=ON PLU=ON L21 AND *C39 H28 N8 O14 S2
          . X LI . X NA"/MF
          D SCA
          D
L23      STR 808139-76-6
          D QUE STAT L20
L24      1680 SEA SSS FUL L19
L25      1 SEA SPE=ON ABB=ON PLU=ON L24 AND L17
          D SCA
L26      12 SEA SPE=ON ABB=ON PLU=ON L21 NOT L25
          D SCA L26
FILE 'STNGUIDE' ENTERED AT 13:40:20 ON 20 JUL 2010
FILE 'REGISTRY' ENTERED AT 13:41:05 ON 20 JUL 2010
          SAV TEMP L24 HAM776REG/A
FILE 'HCAPLUS' ENTERED AT 13:41:27 ON 20 JUL 2010
L27      216 SEA SPE=ON ABB=ON PLU=ON L24
L28      QUE SPE=ON ABB=ON PLU=ON COLOR? OR COLOUR? OR
          PIGMENT? OR DYE? OR STAIN? OR PAINT? OR CHROMA# OR
          CHROMOGEN? OR CHROMOPHOR? OR TINCT? OR TINT?
L29      7051 SEA SPE=ON ABB=ON PLU=ON (LEATHER? OR COWHIDE OR
          COW(A)HIDE) (3A) L28
L30      14 SEA SPE=ON ABB=ON PLU=ON L27 AND L29
          D KWIC
L31      212 SEA SPE=ON ABB=ON PLU=ON L27 AND L28
L32      QUE SPE=ON ABB=ON PLU=ON (LEATHER? OR COWHIDE OR
          COW(A)HIDE)
L33      14 SEA SPE=ON ABB=ON PLU=ON L31 AND L32
L34      14 SEA SPE=ON ABB=ON PLU=ON L30 OR L33
L35      14 SEA SPE=ON ABB=ON PLU=ON L27 AND L32
L36      14 SEA SPE=ON ABB=ON PLU=ON L34 OR L35
L37      QUE SPE=ON ABB=ON PLU=ON PY=<2004 NOT P/DT
L38      QUE SPE=ON ABB=ON PLU=ON (PY=<2004 OR PRY=<2004 OR

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# 10/577,776-337287-EIC SEARCH

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AY=<2004 OR MY=<2004 OR REVIEW/DT) AND P/DT
L39 14 SEA SPE=ON ABB=ON PLU=ON L35 AND (L37 OR L38)
    D KWIC
L40 0 SEA SPE=ON ABB=ON PLU=ON L39 AND ((L2 OR L3 OR L4
    OR L5 OR L6 OR L7 OR L8 OR L9 OR L10 OR L11))
    SAV TEMP L39 HAM776HCP/A
    DEL SEL
    SEL L39 HIT RN

FILE 'REGISTRY' ENTERED AT 13:48:12 ON 20 JUL 2010
L41 51 SEA SPE=ON ABB=ON PLU=ON (31771-14-9/BI OR 440103-79
    -7/BI OR 142388-06-5/BI OR 142388-07-6/BI OR 142388-08-
    7/BI OR 142388-09-8/BI OR 147140-52-1/BI OR 147140-53-2
    /BI OR 147140-54-3/BI OR 147140-55-4/BI OR 147140-56-5/
    BI OR 147140-57-6/BI OR 147140-58-7/BI OR 147140-59-8/B
    I OR 147140-60-1/BI OR 147140-61-2/BI OR 147140-62-3/BI
    OR 147140-63-4/BI OR 147160-50-7/BI OR 147281-93-4/BI
    OR 147281-94-5/BI OR 152333-76-1/BI OR 152689-99-1/BI
    OR 152690-00-1/BI OR 159959-58-7/BI OR 159959-59-8/BI
    OR 159959-60-1/BI OR 159959-61-2/BI OR 159959-62-3/BI
    OR 159959-63-4/BI OR 171370-24-4/BI OR 173783-54-5/BI
    OR 192320-55-1/BI OR 252011-02-2/BI OR 252011-03-3/BI
    OR 252011-04-4/BI OR 252011-05-5/BI OR 252011-06-6/BI
    OR 252011-07-7/BI OR 252011-08-8/BI OR 252011-09-9/BI
    OR 252011-10-2/BI OR 252011-11-3/BI OR 252011-12-4/BI
    OR 252011-13-5/BI OR 31715-24-9/BI OR 31715-26-1/BI OR
    31715-33-0/BI OR 31831-39-7/BI OR 503448-01-9/BI OR
    503448-02-0/BI)
    D SCA

FILE 'HCAPLUS' ENTERED AT 13:49:15 ON 20 JUL 2010
    D QUE L39
    D L39 1-14 IBIB ED ABS HITSTR HITIND

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